

AMENDMENTS TO THE CLAIMS

This listing of Claims will replace all prior versions, and listings of Claims in the application.

1-270. (Canceled)

271. (New) A method for calibrating an analyte sensor, the method comprising:
receiving sensor data from an analyte sensor, the sensor data comprising a plurality of sensor data points;
receiving a reference data point;
forming a matched data pair by comparing the reference data point with a median of the plurality of sensor data points or a mean of the plurality of sensor data points;
generating a conversion function based on the matched data pair; and
converting the sensor data into calibrated sensor data using the conversion function.

272. (New) The method of Claim 271, wherein the sensor data points are filtered sensor data points.

273. (New) The method of Claim 271, wherein the analyte sensor is a substantially continuous glucose sensor.

274. (New) The method of Claim 271, wherein the reference data point is obtained from an *in vitro* blood glucose test.

275. (New) The method of Claim 271, wherein the conversion function is based on one or more additional matched data pairs.

276. (New) The method of Claim 271, wherein a time stamp of each of the plurality of sensor data points is later than a time stamp of the reference data point.

277. (New) A system for calibrating an analyte sensor, the system comprising:
a sensor data module configured to receive sensor data comprising one or more sensor data points;
a reference data module configured to receive a reference data point;
a processor module configured to form a matched data pair by comparing the reference data point with a median of the plurality of sensor data points or a mean of the

plurality of sensor data points, and wherein the processor module is configured to calibrate the sensor data based on the matched data pair.

278. (New) The system of Claim 277, wherein the sensor data points are filtered sensor data points.

279. (New) The system of Claim 277, wherein the sensor data module is configured to receive the sensor data from a substantially continuous glucose sensor.

280. (New) The system of Claim 277, wherein the reference data module is configured to receive the reference data point from an *in vitro* blood glucose test.

281. (New) The system of Claim 277, wherein the processor module is configured to calibrate the sensor data based on one or more additional matched data pairs.

282. (New) The system of Claim 277, wherein a time stamp of each of the plurality of sensor data points is later than a time stamp of the reference data point.

283. (New) A method for calibrating an analyte sensor, the method comprising:

receiving sensor data from an analyte sensor, the sensor data comprising a plurality of sensor data points;

receiving a reference data point;

determining a best matched pair based on a comparison of the reference data point with each of the plurality of sensor data points;

generating a conversion function based at least in part on the best matched pair;

and

converting the sensor data into calibrated sensor data using the conversion function.

284. (New) The method of Claim 283, wherein the best matched pair is determined based on a correlation of the reference data point with each of the plurality of sensor data points.

285. (New) The method of Claim 283, wherein the best matched pair is determined based on a clinical acceptability of the reference data point with each of the plurality of sensor data points.

286. (New) The method of Claim 283, wherein the sensor data points are filtered sensor data points.

287. (New) The method of Claim 283, wherein the analyte sensor is a substantially continuous glucose sensor.

288. (New) The method of Claim 283, wherein the reference data point is obtained from an *in vitro* blood glucose test.

289. (New) The method of Claim 283, wherein the conversion function is further based on one or more additional matched data pairs.

290. (New) The method of Claim 283, wherein a time stamp of each of the plurality of sensor data points is later than a time stamp of the reference data point.

291. (New) A system for calibrating an analyte sensor, the system comprising:

a sensor data module configured to receive sensor data comprising one or more sensor data points;

a reference data module configured to a reference data point; and

a processor module configured to determine a best matched pair based on a comparison of the reference data point with each of the plurality of sensor data points, wherein the processor module is configured to calibrate the sensor data based on the best matched data pair.

292. (New) The method of Claim 291, wherein the processor module is configured to determine the best matched pair based on a correlation of the reference data point with each of the plurality of sensor data points.

293. (New) The method of Claim 291, wherein the processor module is configured to determine the best matched pair based on a clinical acceptability of the reference data point with each of the plurality of sensor data points.

294. (New) The system of Claim 291, wherein the sensor data points are filtered sensor data points.

295. (New) The system of Claim 291, wherein the sensor data module is configured to receive the sensor data from a substantially continuous glucose sensor.

296. (New) The system of Claim 291, wherein the reference data module is configured to receive the reference data point from an *in vitro* blood glucose test.

297. (New) The system of Claim 291, wherein the processor module is configured to calibrate the sensor data based on one or more additional matched data pairs.

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298. (New) The system of Claim 291, wherein a time stamp of each of the plurality of sensor data points is later than a time stamp of the reference data point.